The emergence of agentive systems in core argument marking

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It has been proposed that core argument categories (sometimes referred to as 'alignment') are highly stable over time and strongly resistant to borrowing (Nichols 1992: 181). The proposal certainly seems reasonable. Categories such as subjects and objects, ergatives and absolutives, or agents and patients are often deeply embedded in the grammar, encoded morphologically by case markers or pronominal shape. They are typically distinguished in every clause. Evidence pointing to stability can be found in a number of language families. In North America, for example, all languages of the Iroquoian, Caddoan, and Siouan families, each with a probable time depth of thousands of years, show clear agentive patterns. The agentive patterns may be older than the families themselves: it has been hypothesized that these three families might be remotely related to each other, with a common parent older than Proto-Indo-European (Latham 1860, Chafe 1976: 43–53).

Parallels in core argument categories have even been taken as diagnostic of deep genetic relations. During the first half of the 20th century, when Edward Sapir was attempting to group the recognized language families of North America into larger superstocks, he made just such a suggestion to Alfred E. Kroeber.

(1) Sapir 1920 letter to Kroeber (Golla 1984: 349; emphasis added)

The interest [of polysynthesis] is psychological rather than historical. To me, it is worth less than such an obscure feature as prevalence of stems with initial vowel . . . or *classification of pronouns into transitive and intransitive vs. active and static* (D [Penutian] is characterized by the former, F [Hokan-Siouan] by the latter).

F. Hokan-Siouan
  I.   Hokan proper
        (Shasta down to Seri, Chontal)
  II. Yuki
  III. Coahuiltecan
  IV. Keres

V.ʼ Siouan-Yuchi
  1. Siouan
  2. Muskogi-Natchez
  3. Yuchi
  4. Tunica-Chitimacha-Atakapa

A number of the languages grouped together by Sapir in his Hokan-Siouan super-stock show agentive or active/stative argument patterns, though certainly not all. It should be noted that the hypothesis of a Hokan-Siouan superstock has since been abandoned, and the existence of a Hokan group remains controversial (Goddard 1996: 308–16, Campbell 1997: 290–305, Mithun 1999: 303–4).

Here we will examine the stability of core argument categories by considering the distribution of agentive systems in North America. Such systems are relatively rare cross-linguistically. Nichols (1992: 187) found that nominative/accusative or neutral systems occurred in 65 per cent of the 172 languages in her genetically and areally balanced sample, ergative systems in 19 per cent, and agentive or stative/active systems in just 14 per cent. Within North America, however, she found agentive systems in nearly a third (31 per cent) of the languages sampled. North America is characterized by great genetic diversity, with around 300 languages grouped into 58 distinct language families in the traditional sense— i.e. the largest genetic units considered established on the basis of the comparative method. It also contains some strong linguistic areas, particularly in California, on the Northwest Coast, and in the Southeast. It thus provides a good testing ground for the hypothesis of genetic stability and resistance to areal effects.

12.1 Northern California I

California alone shows substantial diversity: 22 of the 58 language families north of Mexico are represented within its borders. Agentive systems occur in two areas in Northern California.

12.1.1 Yuki

Yuki consists of three closely related languages or dialects: Coast Yuki, Yuki Proper, and Huchnom (Mithun 1999: 574–6). All show the same core argument categories. Material cited here comes from Kroeber (1911), Sawyer and Schlichter (1984), and Schlichter (1985). Forms from Kroeber are identified by the initial K. Forms from Sawyer and Schlichter are identified by the initials of the speakers: Arthur Anderson (A) and Minnie Fulwider (F). Numbers following the initials refer to the pages on which they are cited.

In Yuki, the grammatical roles of participants are expressed primarily in independent pronouns.

(2) Yuki pronouns
mi? ?i: hqw ča:ne-we   F244
2SG 1SG fish give-PAST
'You gave me a fish.'

There are three sets of pronouns.

(3) Yuki pronoun forms

	Set I	Set II	Set III
1SG	?ap	?i:	?i:t
2SG	me?/mi?	mis	me:tq?
1EXCL.PL	?us	?usq	?usqt
1INCL.PL	mi: / me:	miyq / meyq	miyqt
2PL	mo?os/mos	mo?osiyq	mo?siyq

Examples of the uses of each set are in (4), (5), and (6).

(4) Yuki Set I pronouns
?ap   ?ap lis k'qn la?aktekb   'I talked fast.'   A111
1SG   kawaye ?ap munmek   'I'm going to steal the horse.'   A111
me?   ?impis me? ko?omha?   'Where do you come from?'   A244
2SG   mi? ?i: hqw ča:newe   'You gave me a fish.'   F244

(5) Yuki Set II pronouns
?i: kima·se ?i: hqw ča:nek.   'They gave me a fish.'   F133
1SG   kima·se ?i:motmilmek.   'He's going to gamble with me.'   F133
mis   kima·se mis hqw ča:nmek   'They'll give you a fish.'   F244
2SG   ?iye misyu:tha   'What's the matter with you?'   F244

(6) Yuki Set III pronouns: obliques and possessives
?i:t   ?i:thu ?it ki?la?aktek.   'He left before me.'   A133
me:tq?   me:tq?woyol ?o:t hqč.   'Smoking is bad for you.'   A244

As in many languages, 3rd person pronouns are relatively infrequent in speech: continuing 3rd person topics are not re-identified pronominally in every clause.

(7) Unmentioned 3rd persons
a   hu:tmil   pat-ek.   A24
    frybread bake-DECL
    '(She)'s making frybread.'
b   me? t'uk tql-tel   A106
    you hit NEG-IMPERATIVE
    'Don't hit (him)!'

The 3rd person pronouns are used for emphasis or contrast. They are derived from the demonstrative ki? 'that, there'.

(8) Yuki basic 3rd person forms

	Set I	Set II	Set III
3SG	ki?	ki?q	ki?qt
3PL	kima:se	kima:sq	kima:set/kima:sqt

The Set I pronouns might appear at first to represent subjects and the Set II pronouns objects. But some participants that English speakers would encode as subjects are referred to with Yuki Set II pronouns, with both transitive and intransitive predicates.

(9) Yuki Set II with intransitives

ʔi:	hilyuʔ	'I'm sick'	F187
mis	hilyuʔ	'you're sick'	
kiʔq	hilyuʔ	'he's sick'	
ʔusa	hilyuʔ	'we're sick'	
ʔi:	hamloʔotek	'I'm hungry'	A109
ʔi:	hąway k'iʔiptik	'I'm too full of food'	A88
ʔi:	t'oloʔotek	'I feel ashamed'	A21
ʔi:	mikaʔač miːtek	'I am unlucky, have bad luck'	F24
ʔi:	k'ar'k tiːhiš	'I have a sore knee'	A17
ʔi:	šąk šąšek	'I've got a toothache'	A17
ʔi:	loːkąːi: ʔaːʔatek	'I am phlegmatic'	A159
ʔi:	mat hąkimlek	'I can't shoot'	A133
ʔi:	huːšlek	'I'm happy'	F102
ʔi:	ʔinhaːmek	'I'm sleepy'	A190
šul ʔi:	k'altek	'I have a fever'	F37

(10) Yuki Set II with transitives.

a. ʔi: mis   hąl-ek   A104
   1.II 2SG.II hear-DECL
   'I hear you.'

b. ʔin-k'uʔun-ąt ʔi: huːšl-ek   F79
   my-father-POSS 1SG.II love-DECL
   'I love my father.'

c. ʔi: nąk ʔuʔul-ek   A59
   1SG.II dark fear-DECL
   'I'm afraid of the dark.'

Sets I and II do not represent subjects and objects after all. From the examples seen so far, we might hypothesize that this is an active/stative system, in which the choice between the two pronominal sets is triggered by aspect or Aktionsart. Set I pronouns appear with activities and other events ('talk', 'steal', 'come', 'give', 'gamble', 'leave', 'hit'), while Set II pronouns appear with states ('be sick', 'be hungry', 'be full of food', 'be ashamed', 'be unlucky', 'have a sore knee', 'have a toothache', 'be phlegmatic', 'be unable to shoot', 'be happy', 'be sleepy', 'have a fever', 'love', 'be afraid of'). Further examples show, however, that aspect is not criterial. Set I pronouns also appear with states.

(11) Yuki Set I pronouns with states: ʔap 'I'

mą̓l huːyap ʔap mehek	'I'm in the middle of the creek.'	F26
ʔap t:tamąp noʔohek	'I'm living on the mountain.'	Am...
ka ʔapʔonk'e šatk'e šuʔuhek	'I'm sitting here on the cold ground.'	F18...

Set II pronouns also appear with actions and other events.

(12) Yuki Set II pronouns with events: ʔ: 'I'

a.
ʔi: p'a:nessuyitwičk	'I fell down'	F78
ʔi: k'aptek	'I choked'	F44
ʔi: poʔok	'I got burned'	F37
ʔi: ʔotom hiltek	'I burped'	A38
ʔi: yičmik	'I tremble'	K
ʔi: k'awtek	'I yawned'	A243
ʔi: č'aːhtek	'I sweated'	A133
ʔi: nahumtek	'I forgot'	A87
ʔi: hilyuːtek	'I got sick'	F187
ʔi: hwilumek	'I am getting tired'	A219

b. ʔi: kuči naʔamt-ek   A28
   1SG.II knife lose-DECL
   'I lost my knife.'

c. kope meʔa   ʔi: k'iːpt-ek   A71
   coffee too.much 1SG.II overconsume-DECL
   'I drink too much coffee.'

The categories are based on the semantic roles of core participants, forming what can be termed an agent/patient or agentive pattern. The Set I pronouns represent grammatical agents, participants who instigate or control events like 'talk' or 'steal', or states like 'be sitting' or 'be living (somewhere)'. The Set II pronouns represent grammatical patients, those who are not in control but are significantly affected. They may perform actions ('belch', 'yawn'), but they do not control them. A basic pronoun set is lexicalized with each verb. Connected speech shows little evidence of on-line judgments about degrees of control or affectedness.

Speakers can, however, choose not to portray affectedness. The grammatical agent pronouns (Set I) are the unmarked, default choice. Examination of the textual and dictionary material that exists indicates that control or affectedness is more often specified for 1st persons (or for 2nd persons in questions) than for third. This prevalence is not entirely surprising. Speakers might be expected to have a keener sense of what they themselves are feeling, of their own control and affectedness, and more right to express it.

(13) Yuki choices about portraying affectedness

ʔi: lohwištek	'I (PATIENT) coughed'	A53
(kiʔ) lohtek	'he (AGENT) coughed'	A53
wok ʔi: nanaklamek	'I (PATIENT) learned to dance'	A124
(kiʔ) nanak lo:t	'he (AGENT) learns slowly'	A124

Case is also marked on some lexical nouns in Yuki, all of them referring to human beings or personified animals, such as 'woman', 'my father', 'Wailaki' (a neighbouring group), 'Jackrabbit', and 'Coyote', the trickster protagonist of numerous tales (Kroeber 1911: 355, 375–6, Schlichter 1985: 57). The case marking on nouns also follows an agentive pattern, with grammatical agents unmarked and grammatical patients carrying the suffix -q. The alternation between unmarked agent nouns and suffixed patient nouns can be seen in the extracts below from a text by comparing the nouns referring to Coyote. When Coyote is in control, allowing himself be found or watching, the noun is unmarked. When he is not in control, moving involuntarily to snap or hearing something, the patient suffix -q appears.

(14) Yuki text extract (Kroeber 1911: 375–8)

a. sąei haye ki hulkʼói ei haye tʼq-sa-tl-mil.
    and now that Coyote now   find-CAUS-REFL-PAST
    'And now Coyote made himself be found....'
b. sąei hulkʼói náu-mil.
    and Coyote watch-PAST
    'And Coyote watched....'
c. hulkʼó-a   muk-law-et-mil
    →Coyote-PAT snap-move involuntarily-PAST
    'And Coyote involuntarily moved to snap it.'
d. sąei ątą hulkʼó-a hąlt-mil.
    →and again Coyote-PAT hear-PAST
    'And again Coyote heard it.'

Transitivity is not necessarily marked on the verb. Many of the same verb forms are used for both intransitives and transitives.

(15) Yuki transitivity: nąwh 'look, see, watch'

a. nąṭpit-qm ʔąp nąwh-ek.   F182
    window-LOC 1SG.AGT see-DECL
    'I'm looking through the window.'
b. hąn ʔąp nąwh-ek.   F182
    house 1SG.AGT see-DECL
    'I see the house.'

(16) Yuki transitivity: haʔah 'be, get on, pick up, carry, take, pack'

a. sahol̓ ʔol-qp haʔah-ek.   F26
    eagle tree-on be-DECL
    'The eagle is on the tree.'
b. haʔah-ek   F40
    carry-DECL
    'He's carrying it in his arms.'

12.1.2 Wider genetic relations

Yuki has been grouped genetically with one other language, Wappo (Radin 1929: ?, Elmendorf 1968, 1981). (Sawyer 1980 notes that at least some resemblances between the two may be due to contact.) The languages do show striking similarities in pronominal shape.

(17) Similarities in some pronoun shapes (Radin 1929: 134, Elmendorf 1981)

| | Yuki | | Wappo | |
	Set I	Set II	Set I	Set II
1SG	ʔąp	ʔi:	ʔah	ʔi
2SG	miʔ	mis	miʔ	mi
1EXCL.PL	ʔus	ʔusą	isi	isa
1INCL.PL	mi·/me:	miyą/meyą		
2PL	moʔos/mos	moʔosiyą	misi	mísa

In Wappo as in Yuki, 3rd person pronouns have been formed from demonstratives a process that apparently took place independently in the two languages, since the demonstrative bases are different. (The 3R pronouns in both languages are used for 3rd person arguments that are coreferential with the subject of their clause or a higher clause.)

(18) 3rd person pronouns from different demonstratives

| | Yuki | | Wappo | |
	Set I	Set II	Set I	Set II
3SG	kiʔ	kiʔq	tsepʰi	te
3PL	kima:se	kima:sąʔ	tsékoti, óni	tsékoto, on-
3R	kip	kipą	me	

But the Wappo pronouns represent subjects and objects, not agents and patients.

(19) Wappo subject pronoun ah 'I' (Radin 1924, 1929)

a-uhótʼata	'I divided it'	(1929: 103)
a-ʼuowátita	'I hit it'	(1929: 103)
a-teléuse	'I come and get it'	(1929: 32)
a-ʼnaśáʼise	'I jump around'	(1929: 37)

a'-monašotelsi   'I'll drink up'   (1929: 37)
a'-teháwelki   'I am resting'   (1929: 38)
a'-kutšóse   'I am sick, I believe'   (1929: 31)
a-hákuše   'I am hungry'   (1924: 16.47)
a omalthele   'I was hit'   (1929: 52)
a op:óile   'I was kicked'   (1929: 52)
a'okéts-šele   'I was cut'-   (1929: 53)
a'šukálsele   'I am being dragged'   (1929: 53)

(20) Wappo object pronoun *i-* 'me' (Radin 1924)

i-han'tsóyola'   'Don't pity me'   (1924: 16.71)
mi'-i-hin:piwal:ta'   'you woke me up'   (1924: 22)

The Yuki and Wappo pronouns are thus similar to each other in shape but not in function. This fact suggests that the pronouns themselves are a common inheritance, but that the core argument pattern has shifted since the two languages diverged.

12.1.3 *The Pomoan family*

A look at the geographical location of Yuki provides further evidence that core argument categories may not be immune to change. Immediately to the south of Yuki are the Pomoan peoples. Figure 12.1 shows the languages of Northern California. San Francisco Bay appears at the bottom of the map.

The Pomoan family consists of seven mutually unintelligible languages. Each contains three sets of independent pronouns. The inventory of forms in Central Pomo can be seen in (21). Material cited here comes from speakers Frances Jack, Eileen Oropeza, and Florence Paoli (p.c.).

(21) Central Pomo pronouns

	Set I	Set II	Set III
1SG	ʔaː	toː	kʰe
2SG	ma	mto	mkʰe
3SG	muːl	muːtu	muːkʰe
3SG.R	tíː	tíːto	tíːʔkʰe
1PL	ya	yal	yaːʔkʰe
2PL	máya	máyal	máyaːʔkʰe
3PL	múːtuya	múːtuyal	múːtuyaːʔkʰe
3PL.R	ṭṣya	ṭṣyal	ṭṣyaːʔkʰe

As in Yuki, the Set III pronouns represent possessors and obliques. The basic 3rd person forms are recent developments from the demonstrative *muːl* 'that'. Other Pomoan languages show different 3rd person pronominal forms. Continuing 3rd person topics are not usually re-identified in every clause with a pronoun.
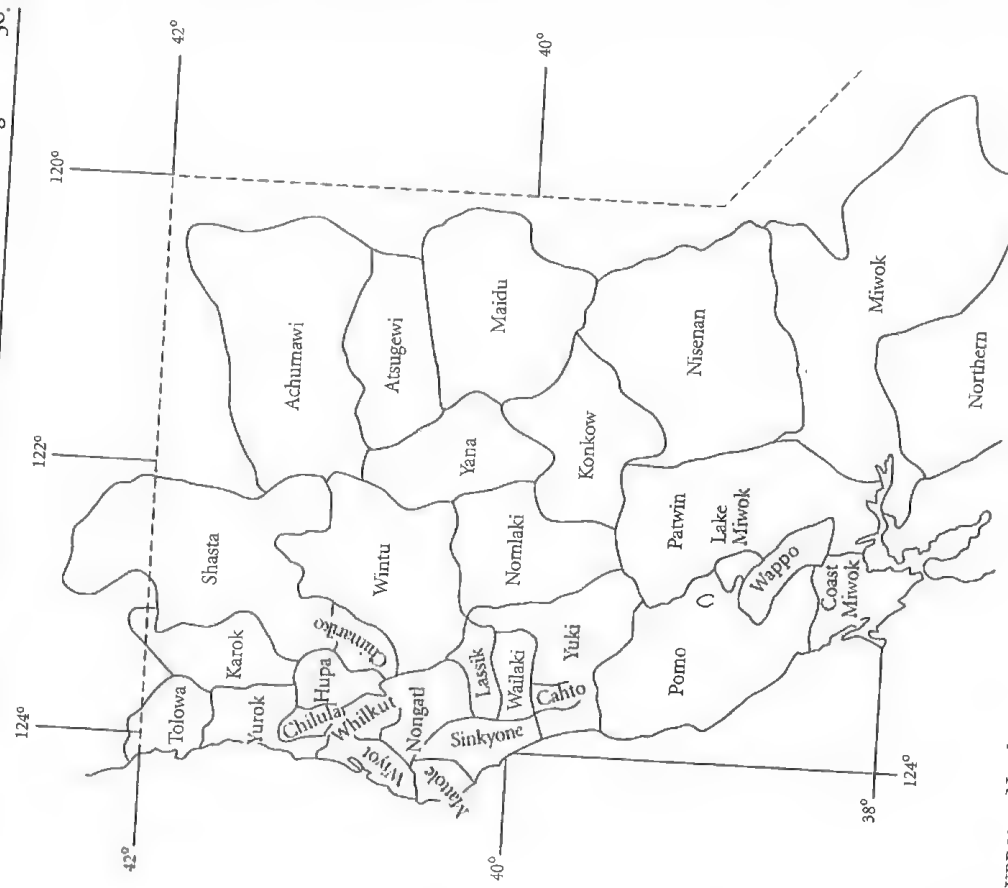

FIGURE 12.1. Northern California (from Heizer 1978: ix).

(22) Central Pomo continuing 3rd person topics (Frances Jack, speaker p.c.)

Méːn-da bal qʰá   ʔel béːč.
such-at   this water   the hold-INCEPTIVE.PFV
'During this time, (she) picked up the water.'

Mi: béːm.
there   hold-ESSIVE
'(She) held (it) there.'

At first glance, Set I pronouns might appear to be subjects and Set II objects.

(23) Central Pomo independent pronouns
a.   ʔa: čá-č-ʔ
      I   run-SEMELFACTIVE-PFV
      'I ran away.'
b.   ʔa: múːṭ u ʔéːy=čadi-w.
      I   him   away=chase-PFV
      'I chased him away.'
c.   Muːl to: ʔéːy=čadi-w
      he   me   away=chase-PFV
      'He chased me away.'

Yet as in Yuki, both Set I and Set II pronouns appear where English speakers would use subject pronouns.

(24) Central Pomo intransitives
a.   Set I ʔa: 'I'
      ʔa: wáq'iʔle   'I would go'
      ʔa: pʰdiːlaw   'I dove in'
      ʔa: sbič   'I got up'

b.   Set II to: 'I'
      to: pʰál   'I'm sick'
      to: bačú: 'I'm tired'
      to: qʰóṭʔa   'I'm ticklish'

Set I pronouns are used with actions like 'go', 'dive', and 'get up' above, while Set II pronouns are used with states like 'be sick', 'be tired', and 'be ticklish'. The distribution could suggest an active/stative pattern. Set I pronouns also appear with states, however, and Set II pronouns also appear with events.

(25) Central Pomo Set I with states
      ʔa: ʔmáːč   'I'm hiding'
      ʔa: maːbáhčʔin   'I'm conceited'
      ʔa: ʔe baneːʔtʔaw 'I'm lazy'

(26) Central Pomo Set II with events
      to: lóːya   'I fell'
      to: qʰáːsnámʔkʰe 'I'll drown'
      to: ʔqáːč   'I got lost'

Both sets appear with intransitives as above, and with transitives, as below, so the system is not ergative. Transitivity is not overtly marked.

(27) Central Pomo transitives
a.   ʔa: qʰá ʔel béːč-ʔ
      1SG.AGT water the hold-INCEPTIVE-PFV
      'I picked up the water.'
b.   to: ʔ=múːṭu ʔ-yáːq-an.
      1SG.PAT COP=3.PAT mentally-know-IPFV
      'I remember her.'

The system distinguishes grammatical agents (Set I) and patients (Set II). Set I pronouns typically refer to participants who instigate, perform, and control events

and states. Usually these three features coincide. When they do not, the feature of control is criterial. A sneezer performs the sneeze but is not in control. Central Pomo speakers use Set II pronouns for sneezers.

(28) Central Pomo performance without control: Set II
      to: ʔésʔesya   'I sneezed'
      to: ʔtéʔčya   'I choked'
      tʔoː téːq   'I burped'

A few verbs can appear with either set of pronouns. These represent separate lexicalizations. For most verbs, speakers have no choice.

(29) Central Pomo lexical doublets
      ʔa: smá mṭːč   'I went to bed'
      to: smá mṭːčka   'I must've fallen asleep'
      ʔa: čʰném   'I rammed it, ran into it (intentionally)'
      to: čʰném   'I bumped into it'
      ʔa.kʔúːkʔluw   'I coughed'
      to:kʔúːkʔluw   'I coughed (involuntary)'

Participants are cast as grammatical patients only when they are significantly affected by the situation and the speaker chooses to empathize with the affectedness. Inanimate objects are never referred to with patient forms, nor are most animals. The agent forms are a default choice.

(30) Central Pomo empathy
a.   Muːl   ʔa: hkʔúm.
      3SG.AGT 1SG.AGENT kill.PFV
      'I killed it' (a fly)
b.   Múːṭu   ʔa: hkʔúm.
      3SG.PAT 1SG.AGT kill.PFV
      'I killed him.' (a person)

Speakers may choose not to express the affectedness of other persons, or even, on occasion, of themselves, when it is not considered relevant.

Some nouns referring to certain people, particularly some kinsmen, have patient case forms. This is reminiscent of the situation in Yuki, where only some animates, generally humans and personified animals, have patient case forms. The shape of the Central Pomo patient case ending is entirely different from that in Yuki, however: -l. Example (31b) below shows that the noun 'woman' does not have a patient case form, but the noun 'wife' does.

(31) Central Pomo patient case on nouns (Frances Jack, speaker p.c.)
a.   Kʰe báːtʰiyiya-l   ʔa: hʔél-an.
      my father.in.law-PAT 1SG.AGT seek-1PFV
      'I'm looking for my father-in-law (PATIENT).'
b.   Múːkheʔ máːṭa qʔaláːw, míya: dáqaːde-l.
      3.POSS woman die 3.KIN.POSS wife-PAT
      'His woman died, his wife (PATIENT).'

12.1.4 The Yuki and Pomoan systems

No genetic relationship has ever been suggested between the Yuki and Pomoan groups, nor is one advanced here. Northern California is a well-known linguistic area, however. Communities were small, and exogamy and multilingualism were the norm. Similarities in shape suggest that Pomoan 1st and 2nd person singular pronouns may have been borrowed into Yuki and/or Wappo. Suggestive similarities are underlined below.

(32) Pronominal forms (McLendon 1973, Elmendorf 1981)

	1.SG.AGT	1.SG.PAT	2.SG.AGT	2.SG.PAT
Northern	ʔa:	ṭo:	ma	mi-ṭo
Central	ʔa:	ṭo:	ma	miṭo
Kashaya	ʔa:	ṭo:mi	ma	ṭo
Southern	ʔa:ʔa	ʔa:má	ʔa:má	mi:-ṭo
Eastern	ha	wi	ma	mí
Northeastern	ʔa:	ʔah-ṭo	ʔáma	míh-ṭo
Southeastern	ʔa:	wi:t̪	ma	ti
Yuki	ʔap	ʔi:	miʔ	mi-s
Wappo	ʔah	ʔi	miʔ	mi

Sawyer and Schlichter (1984: 280) identify the Yuki element -p as HUMAN SINGULAR and -s as PATIENT case. Other pronouns show quite different shapes.

The Yuki and Pomoan systems are similar in several ways. Both consist of independent pronouns that distinguish grammatical agents, patients, and obliques.

Only a few nouns, all referring to persons, carry patient case suffixes. Grammatical agents and grammatical patients appear in both intransitive and transitive clauses, though transitivity is not necessarily specified overtly, and in both events and states. The criterial features for case choice are control and significant affectedness. Speakers may opt not to portray affectedness for humans, and it is never specified for non-humans. Both systems are agentive, or more specifically patientive, since the patient case is semantically marked. Third person pronouns, recently formed from demonstratives, are usually omitted for continuing topics.

The similarities in the finest details are too close, particularly given their relative rarity cross-linguistically, to be due to chance. It appears that the Pomoan system, which is fully developed in all seven members of the family, was borrowed into Yuki. But how could such a fundamental and abstract system be borrowed, particularly without the full paradigms of pronouns that carry it? Because earlier stages of the languages are unattested, we cannot know for certain, but a likely path of development is easy to imagine.

In a language in which (i) intransitive and transitive verbs are not distinguished formally, (ii) topical 3rd persons are usually not mentioned, (iii) few nouns are marked for case, and (iv) word order is predicate-final, it would be a simple matter to reanalyse a nominative/accusative system as an agentive one or vice versa. Reanalysis could take place along the lines below. Transitive clauses with

omitted 3rd person subjects could be reanalysed as intransitive, and objects could be reanalysed as grammatical patients.

(33) (SUBJECT) OBJECT TRANSITIVE VERB   'It scared me (OBJECT)' >
        (it)   me   scared
                  PATIENT INTRANSITIVE VERB 'I (PATIENT) was scared'

Both Pomoan and Yuki exhibit all of the features that would facilitate such a reanalysis. It is not impossible that the development of the pattern took place independently in Pomoan and Yuki, but the strong bilingualism in the area and the cross-linguistic rarity of such systems suggest that the parallelism in their systems is due to reanalysis stimulated by contact.

12.2 Northern California II

The Yuki, Wappo, and Pomoan systems involve free pronouns. As independent words, the pronouns would be more accessible to speaker consciousness and analysis than affixes. Agentive patterns are much more commonly found in bound pronominal affixes, however. Agent and patient pronominal affixes appear in another part of Northern California, also known as an especially strong linguistic area characterized by long-standing patterns of intermarriage, cultural borrowing, and multilingualism.

12.2.1 Karuk

At the northern edge of California is the Karuk language, also visible in Figure 12.1 above. It is considered an isolate, though proposals have been made linking it remotely with a variety of other languages and families in a larger group termed Hokan. An early description of the language is in Angulo and Freeland (1931). A fuller grammar with texts is in Bright (1957). Additional texts are in Harrington (1932a, 1932b). Discussion of the pronominal system is in Macaulay (1992, 2000).

Core arguments are specified in Karuk by pronominal prefixes on verbs.

(34) Karuk pronominal prefixes (Bright 1957: 33, 62, 61)
      ní-mniš   'I cook'
      ʔu-mniš   'he/she cooks'
      kun-ímnis   'they cook'

First person singular pronominal prefixes distinguish grammatical role.

(35) Karuk grammatical role (Bright 1957: 62, 61)
      ní-mmah   'I see him'
      ná-mmah   'he sees me'

The system is more complex than first meets the eye, however. Only one core argument is identified in any verb. The choice of which argument to specify is

based on a person hierarchy. Second person plurals (used elsewhere in California to show respect) are given priority over 1st persons, and 1st persons are given priority over all others: 2PL > 1 > 2SG > 3. If a 1st person acts on a 3rd ('I see (him)'), or a 3rd person acts on a 1st ('(he) sees me'), only a 1st person prefix appears.

There is evidence of an incipient agentive system. The prefix *ni-* 'I' appears with both intransitive and transitive verbs and in both events and states.

(36) Karuk 1st person pronominal (Bright 1957: 63, 48, 125, 125, 125, 62)

ni-ppaːskêːt	'I won'
ni-ʔiːpméːš	'I will go back'
ni-ʔáxaːviš	'I will take it'
ni-yuːphéːn	'I opened my eyes'
ní-xvipha	'I get angry'
ni-ʔáːt	'I was afraid of him'

The prefix *na-* appears in transitives like 'he sees me' above. It also appears in some intransitives, as below.

(37) Karuk 1st person pronominal (Bright 1957: 62, 250)

ná-ʔaxhi	'I bleed'
na-kkúha	'I am sick'
na-sáyriːhva	'I am lonesome'

Bright (1957: 59) notes that certain Karuk verb stems can appear with either 1st person singular prefix *ni-* or *na-*, such as 'be hungry': *ni-xxúrihi* or *na-xxúrihi* 'I am hungry'. Other stems with this option include *ʔáːxhi* 'bleed'; *kúhi* 'suffer pain, be sick'; *sayriːhva* 'be lonesome'; *ʔaßúːnva* 'be jealous'; *ʔáːθva* 'be afraid'; *ʔáxaska* 'be thin, lose weight'; *fíːnhi* 'be bald'; *furáθßip* 'be nervous, cranky, fretful'; *hótahi* 'be late, be offended'; *íčnah* 'defecate'; *iknax* 'be cross-eyed'; *ikviːthi* 'fall asleep'; *ikvúriš(rih)* 'be tired'; *imćak* 'burn oneself, get burnt'; *imćax* 'be hot'; *imčitátko: 'have one's bones protrude through one's skin'; *imftrahi* 'feel pain'; *ixrah* 'thirst for'; *ixrup* 'have an erection'; *pakyav* 'have good luck with'; *ʔrih* 'be unwilling, lazy, tired'; and *yáːvahi* 'have enough'. The prefix *ni-* thus represents 1st person singular agents, and the prefix *na-* 1st person singular patients. The appearance of *na-* with event verbs like 'fall asleep' and 'burn oneself' shows that the system is agentive rather than active/stative. The agentive system is only incipient, however. Grammatical role is distinguished only in 1st person singular (where speakers have direct knowledge about control and affectedness and the right to specify it), and Bright points out that use of the *na-* prefix with verbs like 'be hungry' is optional.

12.2.2 Chimariko

Interestingly, another language isolate in the same area also shows an agentive system, also with a hierarchical overlay. In Chimariko, another isolate visible on the map in Figure 12.1, core arguments are also represented in verbs by pronominal affixes (Mithun, to appear). Only one argument is represented in any verb. The choice of argument is similarly based on a person hierarchy: 1, 2 > 3: that is, 1st and 2nd persons are given priority over 3rd ('I found (her)'). If both core arguments are speech act participants (1st or 2nd person), the agent is given priority over the patient ('I found (you)'; 'You found (me)'). Material cited here comes from the fieldnotes of J. P. Harrington, organized and analysed by George Grekoff.

(38) Chimariko pronominal prefixes (Grekoff, n.d.)

ʔi-mumni	'I was running'
mi-mumni	'you were running'
hi-mumni	'he or she was running'
ʔi-čʼut	'I hit him/her'
mi-čʼut	'you hit him/her'
hi-čʼut	'he or she hit him/her'

The 1st person singular and plural pronominal affixes have two forms: one for grammatical agents and the other for grammatical patients. Both appear in intransitive and transitive verbs.

(39) Chimariko pronominals

a. Set I

ʔi-mumni	'I was running'
ʔi-siyakutni	'I looked back'
ʔ-kʼot	'I am talking'
ʔi-čiʔta	'I caught (the crawfish)'
ʔi-xaʔyta	'I made (the water hot)'
ʔi-winqhuttia	'I dumped (the crawfish)'

b. Set II

čhu-saxnit	'I am coughing'
čh-awin	'I am afraid'
čhu-tʼiʔniman	'I am glad'
čhu-šeyin	'I am named, called'
čhu-čemum	'I jerk, I am shaking, twitching'
čh-akimxanan	'I am going to wash away'
čhu-saʔoʔmuxanan	'I am going to starve to death, give out'

Set I pronominals typically identify semantic agents in control. Other verbs that appear with Set I prefixes mean 'jump around', 'eat', 'sing', '(man) to get married;

'act with the foot', 'walk draggingly or drag along', 'breathe', 'hide', 'stop or turn around', 'swim', 'fly', 'raise hand', 'cross (water)', and many more. Set II pronominals generally identify a significantly affected participant who is not in control. Other verbs that appear with Set II prefixes mean 'have a rash or irritation', 'be afraid or fear', 'hurt or ache', 'be dried or parched', 'cough', 'be glad', 'fall', 'give out or be short of breath', 'sneeze', 'sweat', 'yawn', 'twitch (body part)', and 'get well or recover'.

Third persons are not represented in either Karuk or Chimariko when 1st persons are present, and transitivity is not necessarily marked overtly. Under such circumstances, it is easy to see how reanalysis of a nominative/accusative system as an agentive system (or the reverse) could be triggered by contact. We know that there has long been heavy multilingualism in the area, including among the Chimariko and the Karuk. On the model of the Chimariko system it would be easy for Chimariko-Karuk bilinguals to reinterpret an originally transitive Karuk verb like 'it scares me (OBJECT)' as an intransitive 'I (PATIENT) am afraid' and the original object prefix na- as a patient prefix.

12.2.3 Wiyot

There are several other languages in the immediate area that are not related to either Karuk or Chimariko but that show the effects of long-standing intense contact, with multilingualism and intermarriage. Two of them, Wiyot and Yurok, are remotely related to the Algonquian languages in a family called Algic. In all of the Algic languages, core arguments are represented by pronominal affixes on verbs. These languages are known for their hierarchical systems but not for agentive patterns.

The Wiyot pronominal suffixes fall into two sets. The first set are used with verbs such as kámar 'steal food', hutw- 'bring it', lág 'go', dar- 'act', haskáp 'bite a piece', and thahlab- 'talk to me'. These pronominal endings can be seen in the verbs kámar 'I steal food', kámar-at 'you steal food', kámar-il 'he/she steals food', and kámar-uy 'one steals food' (Teeter 1964: 70–71). The same agent suffixes are used with intransitive and transitive verbs: lág-it 'he/she goes', tathánab-il 'he punched him', hutw-us-it 'he/she brings it for you' (Teeter 1964: 73–4).

The second set of pronominal suffixes are used with verbs such as tiškóhw 'be liked', láhg- 'be heavy', dótatk 'be a large roundish object', tokwan- 'be slapped', tóhw 'be tall', kwápt 'be covered up', latál- 'be burned', and tuli 'be wet'. These pronominal endings can be seen in tišków-al 'I am liked', tišków-alat 'you are liked', tiškóhw 'he/she is liked' (Teeter 1964: 77). Other verbs cited by Reichard in her 1925 grammar include those with such meanings as 'be willing', 'be bruised', 'be cold', 'be hungry', 'be lazy, dull', 'run splinter into body', 'lie', 'sleep alone', 'get power', 'be a person of large proportions', 'be awkward, clumsy', and 'be comical' (Reichard 1925:76). As can be seen, derived passives occur with this second set of pronominal suffixes.

From the descriptions it is not entirely clear whether the system is basically an agent/patient one, an active/stative one, or a mixture. In most situations, the two patterns would yield the same result: one who is burned is both a semantic patient (not in control) and in a state. Glosses such as Reichard's 'run splinter into body' and 'get power' suggest an agent/patient basis. Wiyot does not appear to exhibit a fully formed agentive system, however. Many verbs that would appear with grammatical patients in other languages appear with the first set of pronominals mentioned above rather than the second, such as pačhol-it 'he/she/it falls' and tol-it 'it falls out, drips' (Teeter and Nichols 1993: ii. 230). Furthermore, the forms of the transitive patient pronominals do not generally match those of the intransitive patients.

12.3 The Northwest Coast

Perhaps the best-known linguistic area in North America is the Northwest Coast. It contains languages from a number of language families, many with members outside of the area. Among the families represented are Tlingit-Eyak-Athabaskan, Haida, Tsimshianic, Salishan, Wakashan, and Chimakuan.

12.3.1 Tlingit: Tlingit-Eyak-Athabaskan family

The Tlingit language is a member of the Tlingit-Eyak-Athabaskan family, genetically unrelated to any of the languages discussed so far. It is described in Boas (1917), Swanton (1911a), Story and Naish (1973), and Leer (1991). In all languages of the family, core arguments are identified by pronominal prefixes on verbs. Two 1st person singular pronominal prefixes can be seen below, xa- and xad. (The different orthographies used in the various sources are preserved in material cited here. Some authors describe the pronominals in the xad series as prefixes, others as loosely attached clitics.)

(40) Tlingit pronominal prefixes x- and xad- (Leer 1991)

yá'n-xa-gúd	'I am walking along'
xa-tayé:x	'I am making it'
ka-xa-či'xʷ	'I am kneading it'
xa-ʔús'gʷ	'I am washing it'
xa-žáGx	'I kill it'
xad-wusiti'n	'she saw me'
xad-yandusqé:ž...	'they say to me'
xad-gasgtdž	'I always fall down'
xad-gani:gʷž	'I get sick again'
xad-kawdusasáy	'I am hot'
xad-yak'é:	'I am fine'

The pronominals follow an agentive pattern. Both appear where English would show subjects. Both occur in intransitive and transitive verbs. Both occur with events and states. The agent _xw-_ (_xa-_) can be seen with events above ('I am walking') and with states below ('I am sitting comfortably').

(41) Tlingit agent pronominals with states (Story and Naish 1973)

yan sh ka-_xw_-jix'áku	'I'm sitting very comfortably, just the way I want to'
nísdaat ka-_xw_-didúti	'I was doubled up last night (it was so cold)'
ee jik-_xw_-aakéts	'I'm alert (wondering what you're going to do to me)'
tléilkoo-_x_-shatéeneen	'I was blind (did not have sight)'
kánax oo-_x_-dzikáa	'I'm really lazy'
axyéet sa-_xw_-sit'án	'I'm expecting my son'
sa-_xw_-dihâa	'I was ready' (to be killed as a clan representative, to atone for death of an equal on the opposite side)

The patient _xat_ (_xad_-) appears with states as above ('I'm tired out') and events.

(42) Tlingit patient pronominals with events (Story and Naish 1973)

xat	k'eiwawáash	'I yawned'
xat	oowakich	'I sobbed'
xat	yadúit'kw	'I frequently have hiccups'
xat	woodzigit	'I woke up'
xat	kawdikéi	'I failed completely'
dei	_xat_ googanáa	'I'm going to die'
yaa	_xat_ nalt'tx'	'I am beginning to freeze'
kei	_xat_ naldál	'I'm getting heavier'
yei	_xat_ nalnétl	'I'm gaining weight'
yei	_xat_ nalxtín	'I'm losing weight'

kindayigin _xat_ woodzigéet	'I fell flat on my back'
yan _xat_ keey-shakawdligás'	'I fell on my knees and skidded along'
yaa _xat_ k'ayanadáax	'I kept running' (even after reaching the finish line my legs continued to keep moving forward fast)

Pronominal set is generally lexicalized with each verb. The agent prefix _xw-_ (_xa-_) is used in both sentences below, for example, even though the breaking and burning on those occasions was beyond the control or intention of the speaker.

(43) Tlingit non-fluid pronominals (Story and Naish 1973)

ax táax'al'ee ka-_xw_-aal'éex	'I broke my needle'
sakwnéin _xw_-alit'úch	'I've burned the toast/reduced it to charcoal'

Tlingit is the only language in its family to show agentive patterning in the pronominal prefixes, however. Of the 37 languages in the family, 36 show subject/object patterning. The pronominals themselves are cognate: the cognates of

the Tlingit agent prefixes represent subjects in all other languages. They appear in the same position in the verb, immediately before a valency prefix (called the 'classifier') and the stem. In all of the languages, additional prefixes precede the agent/subject markers, most of which are also cognate across the family. Examples of the pronominal prefixes cognate with the Tlingit agent _xa-_ in Eyak and the Athabaskan language Navajo can be seen below. As the examples show, these are subject pronominals, used to represent both semantic agents and patients, in both events and states, and in both intransitives and transitives.

(44) Eyak subject _x-_ [_x̠-_] 'I' (Krauss 1982)

ich' qu'-_x_-tah	'I will give them to you'
ich' qanuh qu'-_x̠_-tah	'I will show you'
iqe'-_x̠_-'e :	'I will marry you'
iya: yax?qu'-_x_-dah	'I will go around for you (hunting)'
uk'ah q'e'_x_-da:k	'I go back away from them'
q'e' qu'-_x_-daqe:	'I am going to boat back'
i--_x_-'e:k'	'I keep marrying'
ix?a' wax?qu'-_x_-t'uh	'I will live with you'
gala-_x_-tah	'I am alive'
qu'-_x_-sinh	'I will die'

(45) Navajo subject _sh-_ [_š-_] 'I' (Young et al. 1992)

yi-_sh_-háád	'I shook it' (a rattle)
nahjá' 'ii-_sh_-lé	'I removed it, took it away'
hashi-_sh_-ch'qqt	'I hauled it up (water from well)'
'ii-_sh_-kaad	'I tossed them away'
'adah 'ii-_sh_-ááh	'I went down, descended'
'ii-_sh_-zhééh	'I went hunting'
náa-_sh_-bat	'I was whirling around, pirouetting'
naa-_sh_-ch'qqt	'I am barely able to get around'
ni-_sh_-chon	'I stink'
shi-_sh_-chttn	'I was born'
'ádadii-_sh_-nih	'I got hurt'

Though the vast majority of the languages in the family show subject and object pronominals, the numbers alone do not prove that the nominative/accusative pattern was characteristic of their common parent, because of the internal relationships within the family, sketched in Figure 12.2. There could have been one shift from an original subject-object system at the breakup of Proto-Tlingit-Eyak-Athabaskan and Tlingit, or one shift from an original agentive system to a subject-object system between the breakup of the common parent and that of Eyak-Athabaskan.

Evidence for one scenario comes from a neighbour. The current territory of the Tlingit can be seen in Figure 12.3. As reported by De Laguna, the Tlingit expanded into this area relatively recently, moving from the south northward and inland

Proto-Tlingit-Eyak-Athabaskan

Tlingit
X̱-

Eyak-Athabaskan

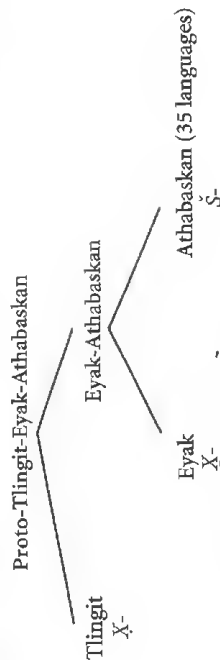Eyak
X̱-

Athabaskan (35 languages)
Š-

FIGURE 12.2. The Tlingit-Eyak-Athabaskan family

around 1700. The southernmost part of their original territory is now occupied by Haida speakers, though Tlingit town names remain there. De Laguna describes intense contact and intermarriage between the two groups (1990: 213).

The Tlingit are known to have absorbed increments of Haidas and Tsimshians, together with ceremonial prerogatives (like the Henya Eagle clan), just as the Tsimshian and Haida have received some Tlingit groups. The Tlingit have also taken in various Eyak and Athapaskan bands, usually treating these foreign groups as clans, and ascribing them new crests.... Such crests identify Tlingit clans, subclans, and lineages and serve as guides in aligning Haida or Tsimshian clans with those of the Tlingit for marriage or potlatching.

The intense contact between Tlingit and Haida suggests an explanation for the difference in core argument categories between Tlingit and all other members of its family.

12.3.2 Haida

Haida is generally considered a language isolate, though possible connections to Tlingit-Eyak-Athabaskan have long been the subject of inquiry (Swanton 1905, 1908, 1911b, Lawrence 1977, Levine 1977, Leer 1991, Enrico 2003). Haida pronouns are free. 1st person singular pronouns *hl* and *dii* can be seen below.

(46)   Haida 1SG *hl* and *dii* (Enrico 2003)

hl sral-gan	'I fixed it'
Joe hlqing-gan	'I saw Joe'
'laa hlst'ida-gan	'I warned him'
hl 'iij-angqasaa-ang	'I am going to go'
dii 'la gu'laa-gang	'he likes me'
dii-gingaan 'la qeenggaa	'he looks like me'
dii hlrwaaga-ang	'I am afraid'
dii rahgal-gang	'I am tired of it'
dii gudang-gang	'I want to'
dii q'ud-ang-gan	'I wasn't hungry'
'laa-gingaandiiqeenggaa	'I look like him'

The Haida pronouns show an agentive pattern. The form *hl* is used for semantic agents in both intransitives ('go') and transitives ('fix', 'see', 'warn'), while the form
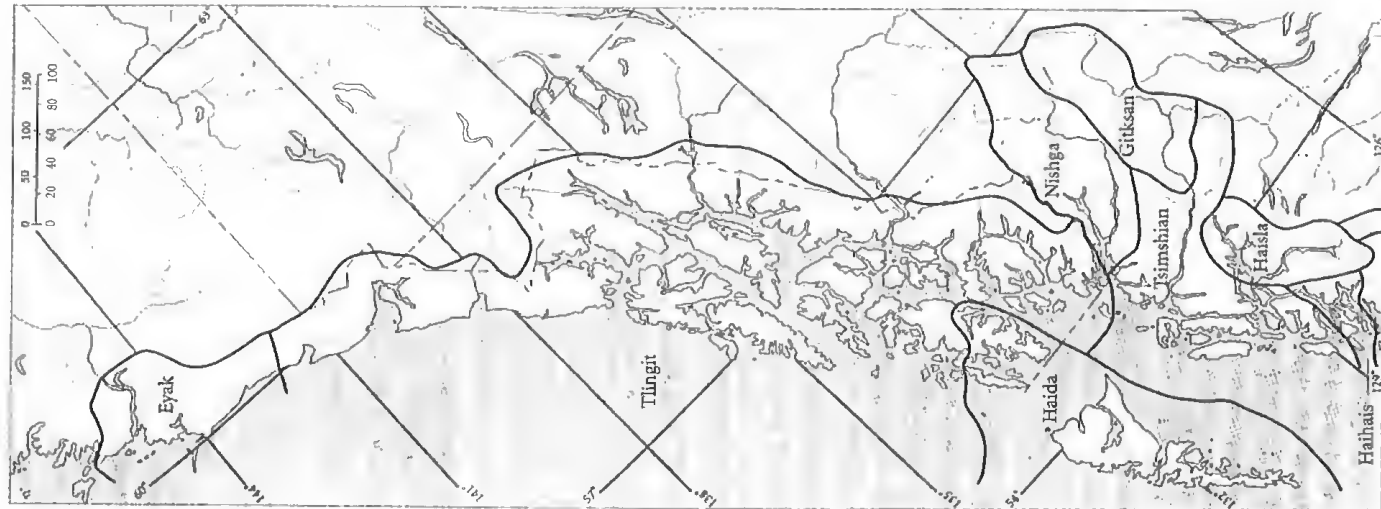

FIGURE 12.3.   Northern Northwest Coast of North America, early 19th century (from Suttles 1990: iv).

dii is used for those affected in both intransitives ('be afraid'; 'be hungry') and transitives ('like'; 'look like', 'be tired of something'; 'want something').

Like the Tlingit pronominals, these do not show an active/stative pattern. The agent pronoun *hl* is used both with actions like 'fix', 'see', 'warm', and 'go' above, and with states like 'be out' below. (The transcription systems used in the original sources are retained here.)

(47) Haida agent *hl* with state: Levine (1977: 183)

gwáy-ay gu ʔu ła ʔij-inn-i.
island-the on FOCUS 1SG.AGT exist-PAST-old
'I (AGENT) was out on the islands.'

The patient pronoun *dii* is used with stative verbs like 'be afraid'; 'be tired'; 'be hungry', 'want' and 'resemble' above, as well as with event verbs like 'fall'; 'bump into'; 'disappear out of sight', 'escape destruction'; 'hiccup'; 'get mad', and more.

(48) Haida patient *dii* with event (Lawrence 1977: 180)

K'yuw-áa-st dii dlawii-gan.
trail-the-from 1SG.PAT fall-PAST
'I (PATIENT) fell off the walk'

Because pronoun choice is semantically rather than syntactically based, transitive clauses may contain two grammatical patient arguments.

(49) Haida double-patient transitives (Lawrence 1977: 77, 147)

a. dáng dii kuyáadaang. b. dáng dii guláagang.
   2SG.PAT 1SG.PAT love   2SG.PAT 1SG.PAT like
   'I (PATIENT) love you (PATIENT).'   'I (PATIENT) like you (PATIENT).'

Argument categories are generally learned with each verb, rather than selected as speakers speak. Sometimes the pronominal category that appears with a particular verb seems at first surprising, until the original or literal meaning of the lexical item is uncovered. The verb 'believe' occurs with a grammatical agent, for example, and the verb 'go somewhere else' occurs with a grammatical patient.

(50) Haida lexicalization

yahda	'believe'	AGENT
	literally 'make true for oneself'	(Levine 1977: 135)
gadas	'go to live somewhere else'	PATIENT
	originally 'come off, ricochet off'	(Enrico 2003: 95)

A few verbs have been lexicalized with both sets of pronouns. The verb *gwaawa/gwaawu*, for example, means 'refuse' with an agent pronoun but 'not want' with a patient pronoun. Enrico notes that the verb *gudrad* is usually used with a patient pronoun to mean 'remember'; but it can be used with an agent pronoun to indicate effort, as in 'OK, I'll try to remember'. A few verbs are used

by some speakers with agent pronouns and by others with patient pronouns, with little change in meaning, such as 'sneeze', 'vomit', and 'vomit up'; verbs that involve performance but not control (Enrico 2003). There is also some systematic dialect variation in pronominal category.

(51) Haida dialect variation Enrico (2003: 93, 102)

q'usahlda	'cough'	Masset	AGENT
		Skidegate	AGENT OR PATIENT
q'anda	'belch'	Masset	AGENT OR PATIENT
		Skidegate	AGENT
sk'al.aaw	'have diarrhea'	Masset	PATIENT
		Skidegate	AGENT OR PATIENT

As in some other languages, the agent/patient distinction does not run through the entire pronominal paradigm. Enrico (2003) notes that all dialects show it in 1st person pronominals: again, speakers are best able to specify their own control and affectedness. For 2nd person singulars, the Skidegate dialect to the south shows the distinction in all pronominals, but the Masset dialect to the north shows it only in non-clitics. For 3rd person singulars, Skidegate shows the distinction in topical clitics. The distinction does not appear in the remaining pronominals.

12.3.3 A mechanism for the Tlingit shift

Since the only language of the Tlingit-Eyak-Athabaskan family to show agentive patterning (Tlingit) is spoken in an area immediately adjacent to another language with agentive patterning (Haida), and since there is documentation of extensive contact between the two, it appears that Tlingit reanalysed its original nominative/accusative pattern as an agentive one under the influence of Haida. As in Yuki and Pomoan, basic 3rd persons were apparently not specified pronominally in Proto-Tlingit-Eyak-Athabaskan (Krauss 1965). The 3rd person gap in the Tlingit paradigm below is matched with the other languages in the family.

(52) Tlingit pronominal prefixes (Story and Naish 1973: 358)

ya-gòot go
woo-xa-ya-gòot > xwaagòot 'I went'
woo-ee-ya-gòot > yeegòot   'you went'
woo- -ya-gòot > woogòot   '(he/she) went'

(More recently, 3rd person object markers have developed in certain contexts in the various languages, from different sources.) The 3rd person gap alone could provide the conditions for a reanalysis of transitive clauses as intransitives, and objects as grammatical patients ('It makes me sick' > 'I get sick'), providing transitivity was not overtly marked. But unlike Yuki and Pomoan, Proto-Tlingit-Eyak-Athabaskan did contain overt markers of argument structure in every verb, markers which persist in all daughters.

In all languages in the Tlingit-Eyak-Athabaskan family, lexical entries for verbs (called verb themes) consist of a stem, preceded by what is termed a 'classifier', possibly preceded by one or more thematic prefixes. The meanings of verb themes may or may not be predictable from their parts. Some samples are below.

(53) Tlingit verb themes (Story and Naish 1973)

a.   ya-   jaakw 'beat up, assault, attack violently'
      CLASSIFIER- STEM

b.   ka-   shi-   dook 'be slushy'
      THEME- CLASSIFIER- STEM

c. sha-   ka-   dli-   gaan 'lean (against something)'
   THEME- THEME- CLASSIFIER- STEM

   sha- 'head'
   ka- 'surface'

Traces can be seen in some Tlingit verb themes of a classifying function for the classifier prefixes.

(54) Classificatory function in Tlingit (Story and Naish 1973)

ya-hoo   'swim on surface of water (human or animal), wade'
si-hoo   'swim on surface of water (bird)'
ya-xaach 'tow, usually by boat'
li-xaach 'tow, usually by boat' (especially a large object)

The classifier prefixes more often serve a more grammatical function in the modern languages. Verb themes can be grouped on the basis of their argument structure: whether they require an agent, a patient, both, or neither.

(55) Tlingit verb theme categories (Story and Naish 1973)

a. Agent/patient transitives ya-jaakw   'beat up, assault'
                              shu-ka-ya-jaa   'advise'
                              ya-dli-gwaash   'hop'
                              sha-ka-dli-gaan 'lean (against something)'
b. Agent intransitives   ya-naa   'die'
c. Patient intransitives   li-teesh   'be lonesome'
                              kee-ya.aa   'to dawn'
d. Impersonals   ka-shi-dook   'be slushy'

Differences in argument structure tend to correlate with the classifier prefix. The first two verbs below are based on the stem .aat. The intransitive ya-.aat 'go in', with the classifier ya-, requires only one core argument, an agent. The transitive si-.aat 'cause to go out', with the classifier si-, requires two core arguments, an agent and a patient. (In the examples below, the verb stem with classifier is listed first, followed by a full illustrative clause.)

(56) Tlingit argument structure alternations (Story and Naish 1973: 377)

ya-.aat	neil wootoowa.át 'we went indoors'	AGT
si-aat	neil wootoosei.át 'we made them [the children] go in'	AGT, PAT
ya-.ee	k'úns' oowa.ée 'the potatoes are cooked'	PAT
si-ee	k'úns' awsi.ée 'he cooked the potatoes'	AGT, PAT
ya-leet	héen-t oowalít 'it slid into the water'	AGT
li-leet	héen-t awlilít 'he slid it [the tree] into the water'	AGT, PAT
di-keil'	haa wdikéil' 'we ran away'	PAT
li-keil'	haa wlikéil' 'he chased us'	AGT, PAT

But the system is far from regular. The verb stems below are all based on the root haa with the prefix ka- 'surface, on', but the semantics are not transparent.

(57) Tlingit argument structure alternations (Story and Naish 1973: 273)

ka-ya-haa	'move (esp indefinite motion), be invisibly, move invisibly'	PAT
ka-di-haa	'disappear, especially turn into vapor, cease to exist'	PAT
ka-si-haa	'bury, excavate'	AGT, PAT
ka-li-haa	'cause to disappear mysteriously'	AGT, PAT
ka-dli-haa	'sneak away, cause oneself to disappear by moving gradually out of sight'	AGT, RFL

The same classifier prefix appears in verbs with different argument structures.

(58) Tlingit same classifier, different argument structures (Story and Naish 1973)

ya-.eex'	'growl (bears), cry out, shout'	AGT
ya-.eex'	'call out to, shout to, holler at, invite'	AGT, PAT
ya-naa	'die'	PAT
ya-naa	'inherit'	AGT, PAT
si-taan	'fall' (of natural precipitation)	PAT
si-taan	'carry, take (usually long, complex object), lay'	AGT, PAT
li-gaas	'be forbidden, taboo, not allowed by custom'	PAT
li-gaas	'abstain from, refrain from'	AGT, PAT
ka-shi-x'eel'	'be slippery' (oil, ice, wet rocks, etc.)	PAT
ka-shi-x'eel'	'iron clothes'	AGT, PAT
di-t'aach	'swim' (human using strokes to slap water)	AGT
di-t'aach	'clap' (hands)	AGT, PAT
dzi-gaax	'keep crying'	AGT
dzi-gaax	'cry for, ask for'	AGT, PAT

Different classifiers appear in verbs with the same argument structure.

(59) Tlingit different classifiers, same argument structure (Story and Naish 1973)

di-xeet	'multiply, increase in numbers, produce young, breed'	PAT
dzi-xeet	'multiply, increase in numbers, produce young, breed'	PAT
ya-xoot'	'drag, esp light object or solid, stiff object, pull'	AGT, PAT
si-xoot'	'drag, pull; haul, transport, convey' (by motor power)	AGT, PAT
li-xoot'	'drag' (especially tail, of fish)	AGT, PAT
ya-taak	'spear, prod, poke, jab at'	AGT, PAT
si-taak	'spear, prod, poke, jab at'	AGT, PAT
li-taak	'poke, prod, pole' (canoe)	AGT, PAT

The classifiers were clearly part of the common parent language, since reflexes of them appear in all members of the family, but their functions have apparently become less transparent over time, as they have become part of lexicalized verbs that have continued to undergo semantic changes of their own.

Story and Naish (1973) and Leer (1991) point out that the classifiers can be arranged in four series, the ya-, si-, li-, and shi- series. All series appear with both intransitives and transitives, though verbs with ya- series classifiers are more often intransitive, and those with si- and li- classifiers are more often transitive.

(60) Tlingit classifiers (Story and Naish 1973: 368)

	−D		+D	
	+identifiable	−identifiable	+identifiable	−identifiable
	ya-	o-	di-	da-
	si-	sa-	dzi-	s-
	li-	la-	dli-	l-
	shi-	sha-	ji-	sh- (rarer)

The four prefix forms in each series are distinguished by two cross-cutting features. Those identified as +identifiable are used with identifiable times and participants. Those identified as +D show traces of an old element d, which does not always show up as such but which has left phonological traces such as voicing, called the D-effect. The +D classifiers appear to have functioned as detransitivizers. They appear across the family in middles.

(61) Tlingit +D middles (Story and Naish 1973)

ya-oos'	'wash (general)'	AGT, PAT
→ di-.oos'	'take a bath'	AGT
si-geet	'wake up, rouse from sleep (with kei up)'	AGT, PAT
→ dzi-geet	'fall (live creature), loose oneself, be lost'	PAT
li-hoon	'go selling, peddle, hawk'	AGT, PAT
→ dli-hoon	'go shopping'	AGT

But modern +D verbs can vary in their argument structures. Some require agents, some patients, some both, and some neither.

(62) Tlingit +D verbs with varying argument structures

di-haan	'stand up'	AGT
di-x'eix'	'be burned (of flesh, skin), become shriveled'	PAT
di-tee	'put on (shirt, dress, etc.)'	AGT, PAT
a-ya-di-tee	'storm, be stormy, rough (of weather)'	–
x'a-dzi-daook	'give final pronouncement of one's opinion and be quiet'	AGT
dzi-geet	'fall'	PAT
dzi-ei	'(medicine man) ask for more (payment) for service'	AGT, PAT
ka-dli-yaas'	'stretch out legs; step, place one's foot'	AGT
dli-neitl	'be fat'	PAT
dli-daas'	'snare'	AGT, PAT

The Tlingit-Eyak-Athabaskan languages have no passives, but they do contain generic/indefinite pronominal categories, sometimes called the 4th person, meaning 'one' or 'someone'. This category can be traced back to their common parent: the Tlingit indefinite agent doo- is cognate with the indefinite subjects in the other languages.

(63) Tlingit indefinite agent doo- (Story and Naish 1973)

kuxwoo-doo-wa-.át	'they (indefinite) went back'	ya-.at
x'aa teen ka-doo-téey	'they carve with an adze'	ka-ya-teey
xat woo-doo-wa-gwál	'somebody hit me'	ya-gwaal

Interestingly, all Tlingit 4th person verbs now require +D (detransitive) classifiers in place of their usual si, li, or shi- classifiers.

(64) Tlingit indefinite agent with +D classifiers (Story and Naish 1973)

kóox woo-too-si-.ée	'we (too-) cooked rice'	si-ee
kóox woo-doo-dzi-ée	'they (indefinite) (doo-) cooked rice'	dzi-.ee
x'úx' kaw-too-shi-xit	'we (too-) wrote a letter'	ka-shi-xeet
x'úx' kaw-doo-ji-xit	'they (indefinite) (doo-) wrote a letter'	ka-ji-xeet

These doo- constructions have apparently been reinterpreted as functional equivalents of passives, and coincidentally as formal intransitives.

(65) Tlingit passive equivalents (Story and Naish 1973)

a. xat woodoodlisháat   li-shaat 'capture'
   xat woo-doo-dli-shaat
   1SG.PAT PFV-INDEFINITE-DETRANSITIVIZER-capture
   'They captured me (OBJECT) > I (PATIENT) was captured.'

b. yát-x xat woodoodliyéx   yát-x+li-yeix 'adopt'
   'People adopted me (OBJECT) > I (PATIENT) was adopted.'

c. sh déin xat kawdoojik'án   sh déi shi-k'aan 'hate'
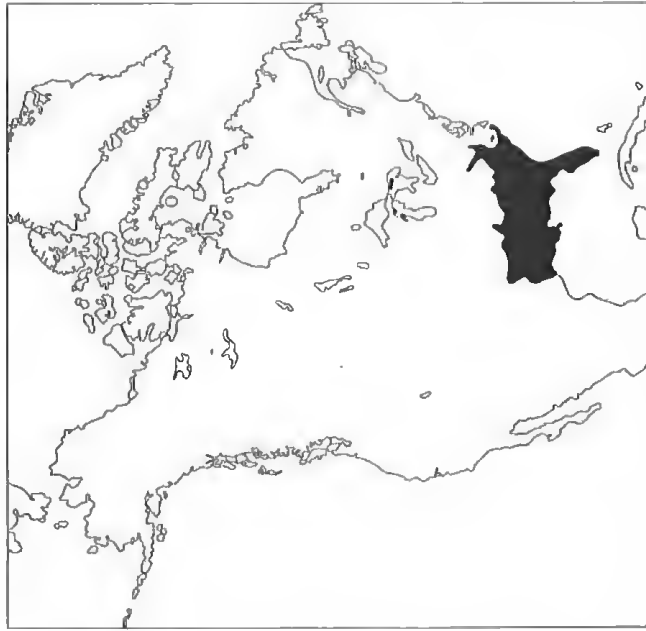   'People dislike me (OBJECT) > I (PATIENT) am disliked.'

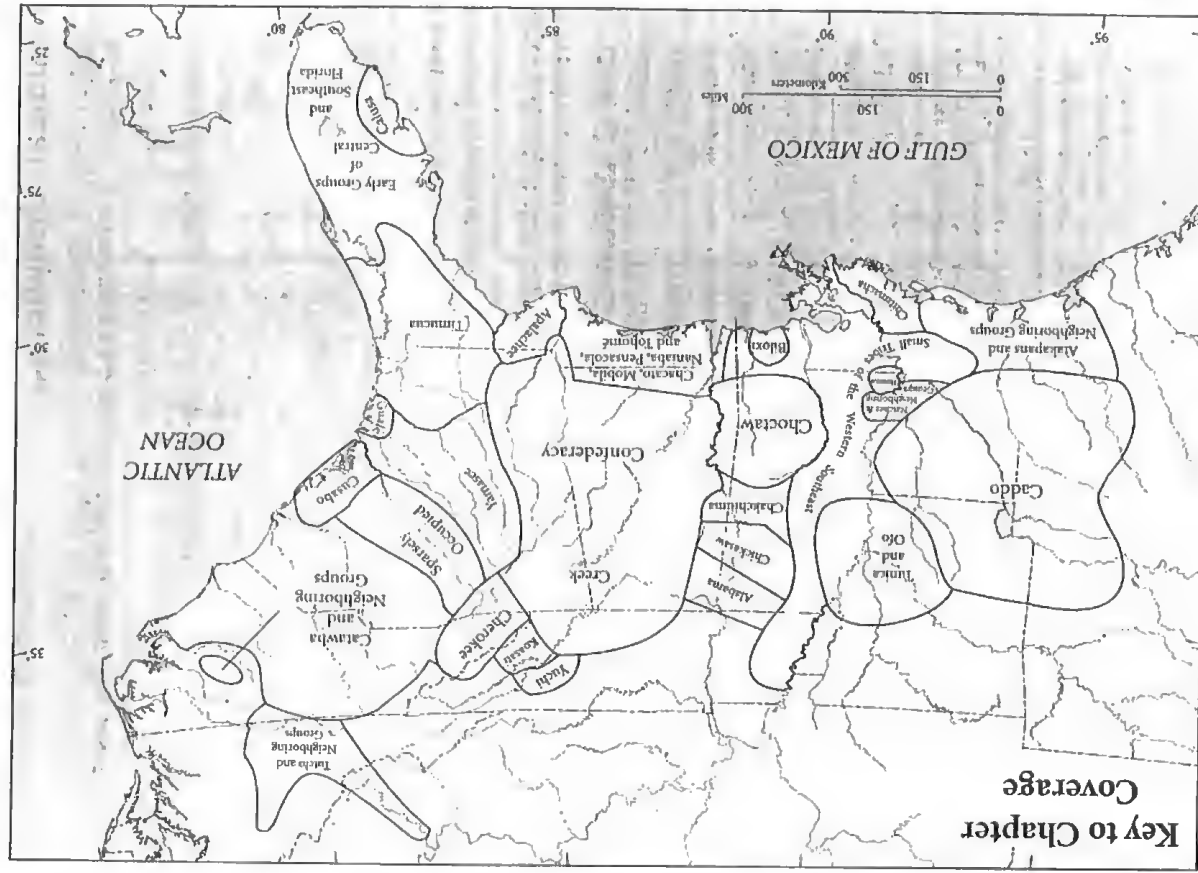FIGURE 12.4. The Southeast culture area of North America (from Fogelson 2004: iii)

The reinterpretation of the indefinite subject verbs as intransitives without specified agents could set the stage for the reanalysis of objects as patients.

12.4   The Southeast

The other North American languages with agentive systems are not scattered randomly over the continent. Many were located in the Southeast at contact, the area visible in the darkened area in Figure 12.4. In fact all attested languages in the Southeast north of Timucua in south Florida show agentive systems. These include all the languages of the Muskogean family and the isolates Chitimacha, Tunica, Natchez, and Atakapa. Their locations can be seen in Figure 12.5. No speakers remain of any of the isolates.

12.4.1   The Muskogean family

The Muskogean languages are Creek, Mikasuki-Hitchiti, Apalachee, Koasati, Alabama, and Choctaw-Chickasaw. In all of them, core arguments are identified by pronominal affixes in verbs.

FIGURE 12.5. The Southeast of North America, general situation in the 16th–18th centuries (from Fogelson 2004: ix)

(66) Creek agent pronominal suffix -éy 'I' (Martin 2000: 379)

na:fk-éy-s   'I am hitting (it/him/her)'
hí:c-ey-s   'I see (it/him/her)'
li:tk-éy-s   'I am running'
léyk-ey-s   'I am sitting'
kô:m-ey-s   'I think / I want it'
ci-na:fk-éy-s   'I am hitting you'

(67) Creek patient pronominal prefix: ca- 'I, me' (Martin 2000: 379)

ca-na:fk-ís   '(S/he) is hitting me'
ca-hí:c-ís   '(S/he) sees me'
ca-híc-i:-s   'I can see'
ca-láw-i:-s   'I am hungry'
ca-yá:-i:s   'I need it'
ca-na:fk-íck-a'   'Are you hitting me?'

The pronominal affixes show an agentive pattern. Both grammatical agents and grammatical patients appear in both intransitive and transitive verbs, but transitivity is not marked overtly. As in the languages seen earlier, the system is based on semantic role rather than aspect or Aktionsart. Agent pronominals appear with both events and states, as do patient pronominals.

(68) Creek agent pronominals with states (Martin 2004: 138, 140)

ata:tk-éy-s   'I'm hanging'
awóleyc-éy-s   'I'm being quiet'
fí:ka:p-éy-s   'I'm resting'
no:c-éy-s   'I'm sleeping'
tóhki:tk-éy-s   'I'm kneeling'
léyk-ey-s   'I'm sitting (have sat down)'
hôł-ey-s   'I'm standing (have stood up)'
wá:kk-ey-s   'I'm lying (have lain down)'
kí:łł-ey-s   'I know (have learned)'
hí:c-ey-s   'I seen it (have looked at it)'
á:cc-ey-s   'I am wearing it (have put it on)'

(69) Creek patient pronominals with events (Martin 2004: 138, 139)

acá-poyc-ís   'I am dreaming'
ca-cókna:h-ís   'I am talking in my sleep'
ca-fîki:k-ís   'I am shaking'
ca-nóca:y-ís   'I am yawning'
ca-híko:kk-ís   'I am hiccupping'
ca-latéyk-s   'I fell'

As in the languages seen earlier, both sets of pronominals appear in both intransitives, as above, and transitives, as above and below.

(70) Creek transitives with patient pronominals (Martin 2004: 140)

ô:wa-n ca-yá:c-i:s   'I want water'
ô:wa-n ca-hos-i:t-tó-s   'I forget water'

For the most part, the choice of pronominal paradigm is lexicalized with each verb. Some verb stems have been lexicalized with both sets.

(71) Some Creek alternatives (Martin 2004: 139)

a. ca-hákti:sk-ís   'I'm sneezing' PAT   (more usual)
   hákti:sk-éy-s   'I'm sneezing' AGT

b. hosi:l-éy-s   'I'm urinating' AGT   (more usual)
   ca-hósi:l-ís   'I'm urinating' PAT   (unable to control it)

c. li:tk-éy-s   'I'm running' AGT   (more usual)
   ca-li:tk-ís   'I'm running' PAT (out of control downhill) (requested)

Third persons are not overtly marked.

(72) Creek zero 3rd persons (Martin 2004: 135, 136)

nafk-   'hit'
na:fk-éy-s   'I am hitting'
na:fk-íck-is   'you are hitting'
na:--fk-is   '(S/he) is hitting' (no mark in third person)
ca-na:fk-is   '(s/he) is hitting me'
ci-na:fk-ís   '(s/he) is hitting you'
na:fk-is   '(s/he) is hitting (him/her)'
inokk-   'be, get sick'
ca-nókk-i:s   'I am sick'
ci-nókk-i:-s   'you are sick'
(i)nókk-i:-s   '(he/she) is sick'

All of these features can be reconstructed for Proto-Muskogean (Booker 1980). All contain pronominal affixes that distinguish grammatical agents and patients, all show zero 3rd person forms, and none marks transitivity. Nouns are marked for case, but the case markers follow a nominative/non-nominative pattern.

12.4.2 Atakapa isolate

Atakapa, a language isolate spoken in the same area, also shows an agentive pattern in its pronominal affixes on verbs, though the actual forms of the affixes are different from those in the Muskogean languages. The 1st person singular agent -ō appears in both intransitives ('travel', 'dance', 'play') and transitives ('wash', 'mock', 'see'), and in both events ('enter') and states ('be chief').

(73) Atakapa agent suffix -ō 'I' (Swanton 1929: 125–6)

tsak'c-ō	'I chew'
want-ō	'I travel'
wan puckint-ō	'I go dancing, will go dancing'
cakhu-ō	'I see them'
wi cakits-ō	'I wake somebody up'
na iwēuckint-ō	'I am mocking you'
ōkōtkōuc patsem-ō	'I wash a shirt'
wic ankamc-ō	'I play'
wi hattsickic-ō	'I shall be chief'
añot inik-ō	'I enter the house'

The first person patient prefix *hi-*also appears in both intransitives ('be tired', 'be strong') and transitives ('bother', 'beat', 'pinch'; 'be afraid of', 'hate'), and in both events ('kill', 'fall', 'get pushed') and states ('be sick', 'be lying').

(74) Atakapa patient prefix *(h)i-* 'I, me' (Swanton 1929)

hi-kuckict haxc	'Don't bother me!'
al atna hi-mic	'Give me a little meat!'
kō-hi-pamulet	'They seized and beat me'
na hi-tsürnta	'You'll pinch me'
hi-nimahaxc	'Don't kill me!'
hi-lakc	'I am tired or lazy'
hi-walcat	'I have dreamed'
hi-cōkec	'I am sick'
wichi-laktikit	'I shall be strong'
hi-tixt	'I am bent, I am laid or lying'
hi-tsañct	'I get pushed'
wi hi-makawet	'I fell'
icak hi-yananian	'I was afraid of him'
icak hi-imilc	'I hate this man'

Swanton points out that there is an indefinite 3rd person pronominal *(h)i-* that has the same form in all uses as the 1st person singular patient (Swanton's 'objective'): *koi hi-tēu* 'one who likes to talk'. Second and 3rd person singular agents are zero. Both facts suggest ways by which the agentive system could have developed out of a nominative/accusative one. As in Yuki, original transitive clauses with zero 3rd person agents could have been interpreted as intransitives, and their original objects as grammatical patients. Alternatively, original transitive clauses with indefinite subjects could have been reinterpreted as intransitives, and the indefinite prefix *hi-* reinterpreted as a patient pronominal.

12.4.3 Chitimacha isolate

A second isolate originally spoken in the area, Chitimacha, also shows an agentive pattern. The 1st person singular agent is *-k* and the patient is *-ki*. Both appear

in intransitives ('die', 'feel cold') and transitives ('beat'), with both events ('make sick') and states ('feel cold'). Second and 3rd persons are unmarked on verbs.

(75) Chitimacha agentive patterning (Swadesh 1946: 326)

geti-k	'I beat (him)'	get-ki	'I beat me'
geti	'(he) beat (him)'	ni:kpa-ki	'(he) made me sick'
		natma-ki	'(he) told me'
		dadiwa-kí	'I feel cold'
		nu:p-ki-ču:š	'if I die'

Other verbs that appear with patient suffixes include *kap ašiše-* 'to become weary'; *kap agïhte-* 'to be greedy', *wokt-* 'to taste, feel', *teki-* 'to suffer pain', *ša'-* 'to sleep or fall asleep'; and *ga:ste-* 'to shiver'.

Examples of the suffixes in use can be seen in the text excerpt below, transcribed and translated by Swanton and analysed by Kimball (1992).

(76) Chitimacha (Speaker Benjamin Paul)

we 'ašant'a-nk hup hi   ču-y-k   'o:ksni-cu-k
we the old.man-by to thither go.SG-1SG.AGT steal-FUTURE-1SG.AGT
'I'll go to the old man and I'll steal it.

wetkš we 'ašant'i hect šuš c'isn tep hamčmiš hi   k'aptk
then the old.man watch wood piece fire have   thither grab
'Then (he) watched the old man, seized a piece of wood having fire,

kun-huk'u   nuhč-i
HEARSAY-it.is run-AORIST
and ran....

'uč hiš k'an kakw-i?   ši'i. ka:kwi k'ay-i-k
who 3 not know-PARTICIPIAL be   know be.not-AORIST-1SG.AGT
Still no one knows. I do not know.

huyk'iš 'am   o:nak ni   sik-ki   k'an ši-ki
good   something all   PREVERB forget-1SG.PAT not be-1SG.PAT
I am not forgetting all good things. I have not forgotten everything yet.

A reanalysis of transitives with zero subjects as intransitives could have occurred.

12.4.4 Tunica isolate

A fourth isolate in the area also shows a three-way distinction in its pronominal affixes. One set of affixes is used for agents of both intransitives and transitives.

(77) Tunica agent prefix ʔa- 'I' (Haas 1946: 366)

ʔa-sani	'I came'
ʔuhpéhkʔa-hkini	'I hit him'

A second set, also used for inalienable possessors, is used for intransitive patients.

(78) Tunica intransitive patient 'i 'I' (Haas 1946: 366)
'í-yaší   'I am angry'
i-šʔépa   'I am glad'

A third set, also used for alienable possessors, is used for transitive patients.

(79) Tunica transitive patients 'ihk-"me' (Haas 1946: 366)
'ih-pékʔuhki   'he has hit me'
'ihk-ʔéhʔuhki   'he kicked me'

Masculine and impersonal genders are distinguished in the 3rd person. The impersonal 'refers to a non-realist or nameless entity which can never be substantially expressed within the sentence' (Haas 1941: 56–7).

(80) Impersonal (Haas 1941: 57)
šihtuna ya-ti-hč
dark   become-IMPERSONAL.AGT-SUBORDINATE
'when it got dark'

The impersonal is also used for feminine persons. In addition, as in many languages, impersonal constructions are used much like passives in other languages to background an agent.

(81) Impersonal with passive effect (Haas 1941: 59)
'uwenitištukʔɔh ɔni
'uhk-wéni-ti-štukʔɔhɔ-áni
3M.SG.PAT-find-IMPERSONAL.AGT-cannot-be
'one cannot find him' = 'he cannot be found'

Haas notes furthermore that transitive clauses with impersonal agents were used as alternate forms for involuntary actions (1941: 59):

In addition to the types of transimpersonals discussed above there is evidence that stems denoting involuntary action (e.g., 'to breathe'; 'to cough') were formerly used as transimpersonals. The more usual procedure now is to treat such stems as intransitives. Note the following pairs of words given by the informant as equivalents:

Transimpersonal   Intransitive
'ihéhakatti   or   héhakani   'I am breathing'
'ihkʔúhakti   or   'úhukani   'I am coughing'
'ihkʔówikatti   or   'ówikani   'I am sweating'
'ulėhukatti   or   lėhukú   'he is panting'

In addition, there is one stem denoting an involuntary action which is always transimpersonal, viz. híyu 'to wake up', as in 'ihíyʔɔkí 'I woke up'.

The 'transimpersonal' forms contain the impersonal agent prefix 'ih(k)-.

12.4.5 Natchez isolate

The fourth isolate in the Gulf region, Natchez, also shows an agentive pattern in its pronominal affixes. Both the 1st person singular agent prefix t- and the 1st person patient prefix ni- appear in intransitives and transitives, and in events and states.

(82) Natchez agent prefix t- 'I' (Haas p.c. 1982)
toy-t-awaːn   'I win'
kip-t-ewa   'I'm going around it'

(83) Natchez patient prefix ni- 'I, me' (Haas p.c. 1982, Kimball 2005: 441)
cakna-ni-laːn   'he is sticking me'
maːcop-eːn-uː: 'I will lose'
caːya   ʔ:Minuʔa.
caː-ya   ʔ:M-ʔ -ni-w-a.
deer-ARTICLEbe.tired.of-PAST-1SG.PAT-AUX-MOD
'I am tired of deer meat.'

Additional verbs with patient prefixes have such meanings as 'be ashamed'; 'be afraid'; 'be happy'; 'be excited'; 'be hungry'; 'be intoxicated'; 'be cold'; 'be thirsty'; 'be tired'; 'be old'. Verbs with grammatical patients corresponding to English subjects are conjugated with auxiliaries inflected for tense in the zero form used for 3rd person agents.

12.4.6 The Southeast

The languages indigenous to the Southeast are not demonstrably related to each other. The Muskogean family forms an uncontroversial genetic unit, but the status of the isolates Atakapa, Chitimacha, Tunica, and Natchez is much less clear. The four isolates are sometimes referred to as 'the Gulf languages', but primarily on the basis of their location along the Gulf of Louisiana. It has been hypothesized that Natchez might be related to the Muskogean family as a whole at a time depth comparable to that of Proto-Indo-European (Brinton 1873, Swanton 1907, Haas 1956). Haas commented (p.c. 1989) that if there are any relationships among the languages in the area, the closest to the Muskogean family would be Natchez, followed by Tunica, then Atakapa, and finally, though questionably, Chitimacha, but she made it clear that any such relationships were too remote to be established with certainty.

Though the shapes of the pronominal affixes vary from language to language, it is striking that all show agentive patterns. All of the languages also show just the features that could foster the reanalysis of nominative/accusative systems as agentive systems and vice versa. All contain zero 3rd person agent affixes, indefinite pronominal agent affixes, or both. None shows a formal distinction between intransitive and transitive verbs. Under these conditions it would be easy to reanalyse original transitive clauses with omitted or impersonal 3rd person agents as intransitives, and original object pronominals as grammatical

patients: '(X) scares me (OBJECT)' or 'Something scares me (OBJECT)' > 'I (PATIENT)am scared'.

The Southeast is well known as a strong linguistic area, one that shows the effects of long-standing, intense contact across language boundaries and pervasive multilingualism. This situation, along with the fact that all of the languages contain the structures that would facilitate the reanalysis of accusative patterns as agentive patterns, suggests that such reanalysis was triggered by contact. The languages do vary in the proportions of verbs that appear with patient pronominals, suggesting that the pattern is less deeply established in some of the isolates, but it is not clear where the agentive pattern may have originated. The pattern may even have originated outside this group.

Several other large language families are also represented in the Southeast, in particular the Iroquoian family (Cherokee, Tuscarora, Nottoway, and Meherrin), the Caddoan family (Caddo), and the Siouan-Catawba family (Ofo, Biloxi, and Tutelo). As noted at the outset, all three of these families show well-established agentive patterning in their pronominal affixes (Mithun 1991). All three families covered a wide area at contact, extending throughout the Eastern Woodlands, west over Great Plains, and north of the modern Canadian border. The isolate, Euchee (Yuchi), generally thought to be related to Siouan-Catawba, was spoken in Georgia until 1836–40, when speakers were forced to move to Oklahoma. It shows an active-stative pattern (Linn 2001). It is not unlikely that this system developed from an earlier agentive system, since the vast majority of actions involve agents, and the vast majority of states involve patients.

12.5 Conclusions

Parallelism in core argument categories may not be as good a diagnostic of deep genetic relationship as once thought. We are learning more all the time about the processes by which systems of one type can develop into those of another. Here we have seen that the distribution of agentive patterns shows an extremely strong areal distribution in North America, occurring in three of the strongest linguistic areas, California, the Northwest Coast, and the Southeast. It is easy to see the mechanisms by which agentive patterning could be transferred through contact, even when the markers that carry it, usually pronominals, are not transferred themselves. In situations where pronominal reference to topical 3rd persons is usually omitted, and there is no overt marker of transitivity, it would be easy to reinterpret transitive clauses like '(It) is hurting me' as intransitives like 'I am in pain', and object markers as grammatical patient markers. Nearly all of the languages seen here show just these features.

A second mechanism could also result in such a reanalysis. In languages with an indefinite or generic pronominal category ('one', 'someone', 'something'), transitive clauses with indefinite subjects are often used in ways similar to passives in other languages, as a means of backgrounding agents. When such usage becomes

well established and the indefinite subjects are fully backgrounded, the clauses may be reinterpreted as intransitives, as in Tlingit and Atakapa. Both of these processes could occur spontaneously in languages under the right conditions, but the areal distribution of the agentive systems in North America strongly suggests that bilingualism in another language which already had such a system could provide a strong stimulus for the reanalysis.

The more we learn about the genetic and areal distributions of core argument patterns cross-linguistically, and about the precise patterns to be found in individual languages, the better we will be able to uncover the internally and externally triggered mechanisms by which they can develop and change. Work by Harris (1985) on Kartvelian, Aldai (this volume) on Basque, Gutiérrez and Zavala (2005) on Chol, Holton (this volume) on North Halmaheran languages, and Malchukov (this volume) on a variety of languages in North America and New Guinea are already contributing to our understanding of such mechanisms.

The Typology of Semantic Alignment

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